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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,304

05/04/2006

Hatsuhiko Harashina

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EXAMINER

REDDICK, MARIE L

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/578,304	HARASHINA, HATSUHIKO	
	<b>Examiner</b>	<b>Art Unit</b>	
	MARIE REDDICK	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05/04/06 & 10/02/08.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 22 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/04/06 &amp; 10/02/08</u> .                                 | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statements filed on 05/04/06 & 10/02/08 have been considered by the examiner.

### ***Claim Objections***

3. Claims 22 & 23 are objected to because of the following informalities: The recited "recited in claim 1" should read "according to claim 1". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) The recited "an aldehyde-inhibiting composition which inhibits an aldehyde" per claims 1, 10 and 24 constitutes indefinite subject matter as per it not being readily ascertainable as to the intended meaning of said objectionable phrase. It is ***suggested*** that applicant adopt "an aldehyde emission-inhibiting composition which inhibits emission of an aldehyde" so as to engender claim language clarity.

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B) The recited “an organic carboxylic acid” per claim 15 constitutes indefinite subject matter as per said terminology including redundant subject matter. It is suggested that applicant delete “organic” so as to avoid any confusion and engender claim language clarity.

C) The recited “at least one member selected from the group consisting to an acrylic resin and a styrenic resin” per claims 18 & 19 constitutes indefinite subject matter as per i) the use of improper Markush terminology, “selected from the group consisting of” is proper and is suggested and ii) it is not readily ascertainable as if or how said objectionable term “styrenic” further limits the claims, use of “styrene” in lieu of “styrenic” is suggested so as to avoid any confusion and engender claim language clarity.

D) The recited “silicone-series resin” per claim 20 constitutes indefinite subject matter as per the metes and bounds of said terminology engender an indeterminacy in scope.

E) The recited “at least coexistent with the aldehyde-inhibiting composition per claim 21 constitutes indefinite subject matter as per it not being readily ascertainable as to how such further limits the antecedently recited polyacetal resin composition which comprises a polyacetal resin and an aldehyde-inhibiting composition.

6. While it is understood that applicant is entitled to be his/her own lexicographer, it is incumbent upon applicant to set forth in a clear and concise manner that which is regarded as the invention.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4, 6-21 and 24-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harashina (International Patent WO 0105888) as interpreted by the English Equivalent to Harashina (US 6,753,363), authorized per MPEP 901.05.

Harashina, English equivalent to WO '888, teaches a composition defined basically as containing a polyacetal resin, a flame retardant, a basic nitrogen compound wherein, said nitrogen compound includes hydrazine and derivatives thereof and conventional adjuvants (Abstract of Harashina and claims 12-20). More specifically, Harashina define the hydrazine derivatives as compounds which include mono- and polycarboxylic acid hydrazides, viz., C2-C22 aliphatic monocarboxylic acid hydrazides, C6-C20 aromatic carboxylic hydrazides and other mono- and polyhydrazides derived from C2-C40 saturated aliphatic polycarboxylic acids and ester derivatives thereof, C8-C16 alicyclic polycarboxylic acids and ester derivatives thereof, C4-C20 unsaturated polycarboxylic acids and ester derivatives thereof and C7-C16 aromatic polycarboxylic acids and ester derivatives thereof with preference given to the C2-C22 aliphatic monocarboxylic acid hydrazides (col. 30, lines 7-32 of Harashina and claims 1, 3 & 10). Harashina further teaches that the basic nitrogen containing compound (hydrazide compound) can be used singularly or in a mixture and in an amount of about 0.01 to 80, most preferably, 0.1 to 20 pbw per 100 pbw of the polyacetal resin (col. 31, lines 37-

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50 of Harashina and claim 11). Harashina further teaches that the antecedently recited conventional adjuvants include drip inhibitors, antioxidants, fillers, colorants, a weather (light) resistant stabilizer, a slip agent, impact resistant improvers (core-shell polymers), additional resins which include acrylic resins, polyester resins, polyester resins, etc., an oxidation inhibitor, a filler, an inorganic flame retardant, heat stabilizer(s), useful in enhancing the heat stability of the polyacetal resin, such as alkaline or alkaline earth metal compounds, particularly organic carboxylic acid metal salts which include calcium citrate with preference given to the calcium and magnesium compounds (col. 31, lines 51-56, the paragraph bridging cols. 35 & 36 and col. 36, lines 6-8 of Harashina and claims 1-4, 6, 8, 10, 12-20 & 24). Harashina further teaches that the amount of organic carboxylic acid metal salt compound (heat stabilizer) operable within the scope of the invention is about 0.01 to 20 preferably about 0.1 to 15 pbw per 100 pbw of the polyacetal resin (col. 36, lines 38-41 of Harashina and claim 7). Harashina further teach that the polyacetal resin composition can be a particulate or molten mixture and can be prepared by mixing, e.g., the polyacetal resin, the basic nitrogen-containing compound (hydrazide compound) and heat stabilizer (organic carboxylic acid metal salt) additive, viz., a process comprising mixing the components together, kneading and extruding the resultant mixture using a uniaxial or biaxial extruder into pellets (col. 36, lines 43-55 of Harashina and claim 21). Harashina further teaches that mixing of a powdered polyacetal resin (substrate) with other components such as a basic nitrogen-containing component (hydrazide) followed by melt-kneading to yield a shaped article is advantageous (paragraph bridging cols. 36 and 37 of Harashina and claim 9). Harashina further teaches that the shaped article derived from the polyacetal

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resin composition has a variety of usages which include mechanical parts, electric/electronic fields and parts, daily life needs, etc. (col. 37, lines 16-60 of Harashina and claim 26). Harashina therefore anticipates the instantly claimed invention with the understanding that a) the polyacetal resin composition of Harashina is sufficiently small enough to anticipate the claimed invention, *In re Schaumann*, 572 F.2d 312, 197 USPQ 5 (CCPA), *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990) and *In re Sivaramakrishnan*, 673 F.2d 1383, 213 USPQ 441 (CCPA 1982). When the species is clearly named, the species claim is anticipated no matter how many other species are additionally named and b) the components per claims 13-20 are not positively recited. Although Harashina is silent with respect to the aldehyde inhibiting property, the examiner has a reasonable basis for believing that this property may be met by Harashina since the composition is the same as and made in essentially the same manner as the claimed composition.

As to the molded product limitations per claimed 25, it is presumed that if the molded polyacetal resin composition of Harashina is subjected to the conditions identified per said claim, the formaldehyde emission property would be met.

Applicant has the burden of showing that, if fact, the above is not the case by proving otherwise. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established, *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Moreover, when the PTO shows a sound basis for believing that the products of the applicant and

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the prior art are the same, the applicant has the burden of showing that they are not,

In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Even if it turns out that the examiner has somehow missed the boat and the claims are not anticipated, it would have been obvious to the skilled artisan, at the time the invention was made, to extrapolate from Harashina, the precisely defined invention, as per such having been within the purview of the general disclosure of Harashina and with a reasonable expectation of success.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 5, 22 & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina (International Application WO 0105888) as interpreted by the English Equivalent to Harashina (US 6,753,363), authorized per MPEP 901.05.

Harashina, English equivalent to WO '888, is as described supra and as applied to claims 1-4, 6-21 & 24-26. Further, the disclosure of Harashina differs basically from the



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claimed invention as per the non-express disclosure of an embodiment directed to a) an aldehyde-inhibiting composition according to claim 1, wherein the metal salt of a hydroxy polycarboxylic acid is a hydrate salt (claim 5), b) a process for producing a polyacetal resin composition, which comprises melt-mixing a polyacetal resin and an aldehyde-inhibiting composition recited in claim 1 with an extruder, wherein at least a carboxylic acid hydrazide is fed to the extruder through a side feed port and mixed with the polyacetal resin (claim 22) and c) a process for producing a polyacetal resin composition, which comprises melt-mixing a polyacetal resin and an aldehyde-inhibiting composition recited in claim 1 with an extruder, wherein the average retention time in the extruder is not longer than 300 seconds (claim 23). As to a), based on the structural similarity of the metal salt of the hydroxyl polycarboxylic acid and its hydrate salt, it would have been obvious to the skilled artisan, at the time the invention was made, to use the hydrate salt in formulating the polyacetal composition of Harashina with a reasonable expectation that it would perform in a manner similar to its counterpart, absent some evidence of unusual or unexpected results. There is absolutely nothing viable on this record diffusing this issue. In obviousness rejections based on close similarity in chemical structure, the prima facie case of obviousness rises from the expectation that compounds similar in structure will have similar properties, In re Payne, 606 F.2d 303, 203 USPQ 245 (CCPA 1979); In re Hoch, 428 F.2d 1341, 1342 n.3 166 USPQ 406, 407 n. 3 (CCPA 1970) and In re Gyurik, 596 F.2d 1012, 201 USPQ 552, 557 (CCPA 1979). As to b) Harashina teaches a process as described supra which basically involves melt-mixing, kneading and extruding the components into pellets followed by molding the pellet (col. 36, lines 43-51). Therefore, it would have been

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obvious to the skilled artisan, at the time the invention was made, to modify Harashina by altering the mode of addition of the component(s), viz., the carboxylic acid hydrazide component, and with a reasonable expectation of success, In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious). As to c), it would have been obvious to the skilled artisan, at the time the invention was made, to modify Harashina by optimizing the melt mixing of the polyacetal resin composition, such involving only routine experimentation and without an undue burden. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges and/ or conditions by routine experimentation, In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

13. US patents 3,418,280 to Orgen, 4,386,178 to Schuette, 6,642,289 to Harashina et al and 6,753,406 to Wulf et al are cited as of interest in teaching polyacetal resin compositions and are considered merely cumulative to the prior art supra.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIE REDDICK whose telephone number is 2-5816. The examiner can normally be reached on 6:30 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID WU can be reached on 2-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MR/  
05/01/09

/David Wu/

Supervisory Patent Examiner, Art Unit 1796